SCAG PECAS Land Use Model Progress

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Modeling Taskforce Meeting

This presentation covers

- Where were we at September?
  - Objectives
  - Current status
- Baseline Model Calibration
- Multi-Year Base Run
- To - dos

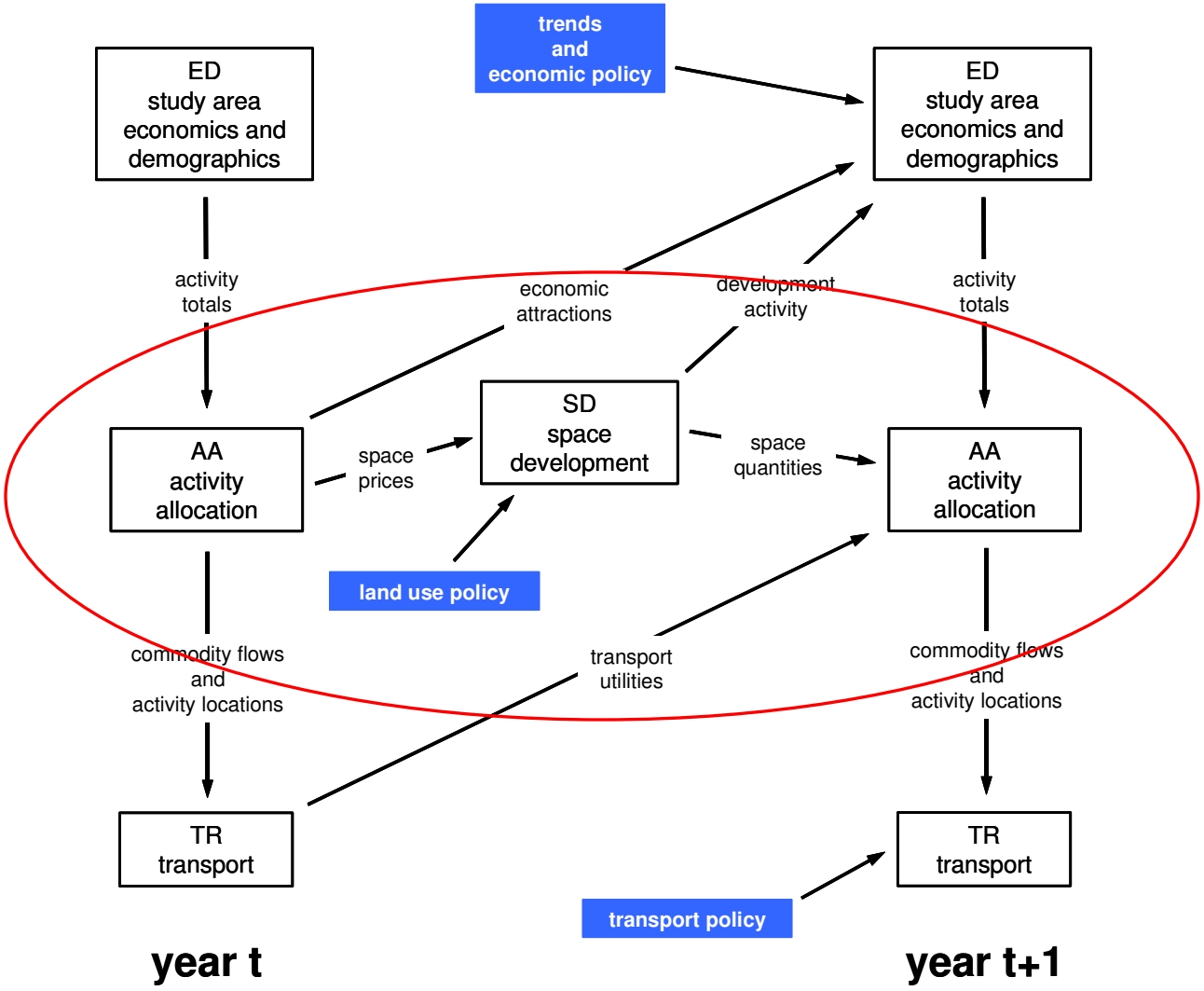
Project Objectives

- A working land use model by January 2010.
  - Support analysis demand for comprehensive impact from land and transportation system / regulation changes.
  - Establish knowledge base on model and data for regional modeling.
  - Through series of workshops.
    - Model theories / Model operation / Data model
    - Data provision by staff
    - Model calibration by staff

What we have now

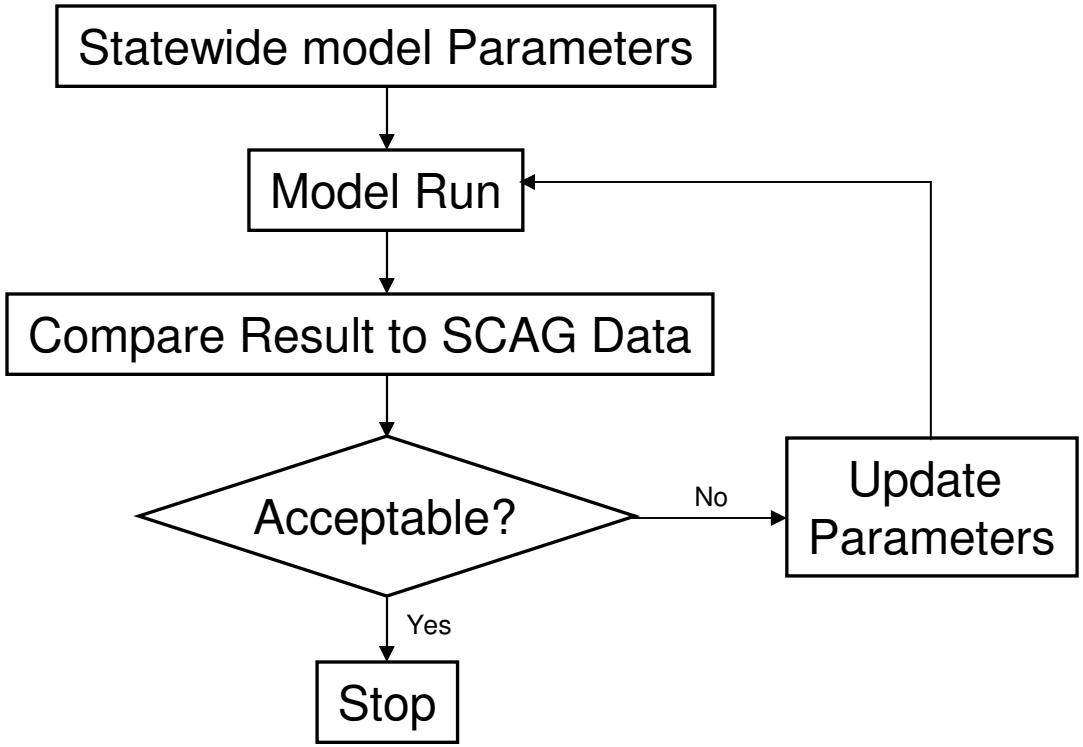
- Model that runs through multiple year
  - Consecutive runs of AA / SD
  - Given skim
  - So far, it runs from 2007 to 2035
  - Several scenario tests
- Database
  - Parcel
  - Employment
  - Households
  - Building Inventory

Within PECAS Structure

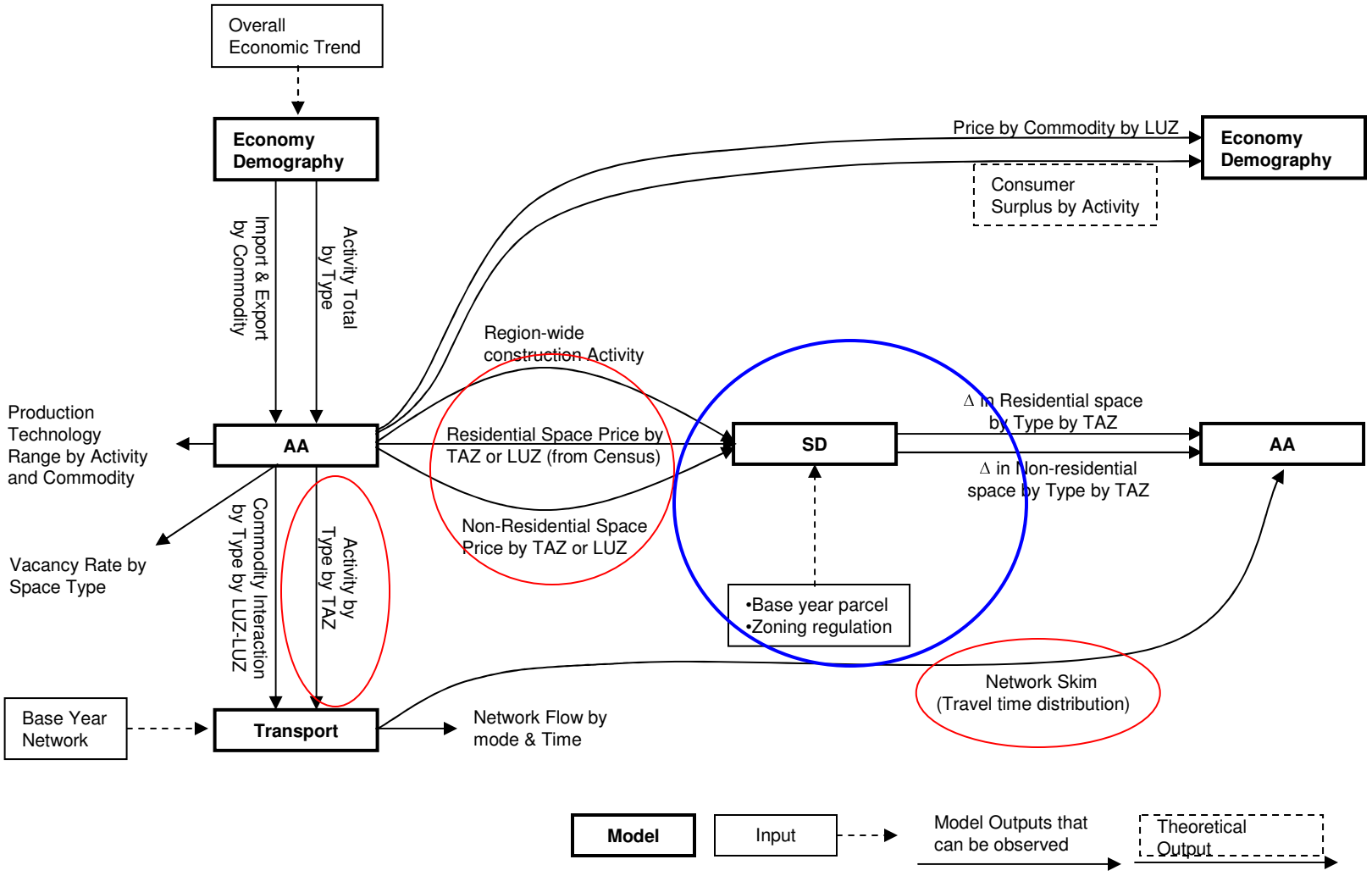


Baseline Calibration

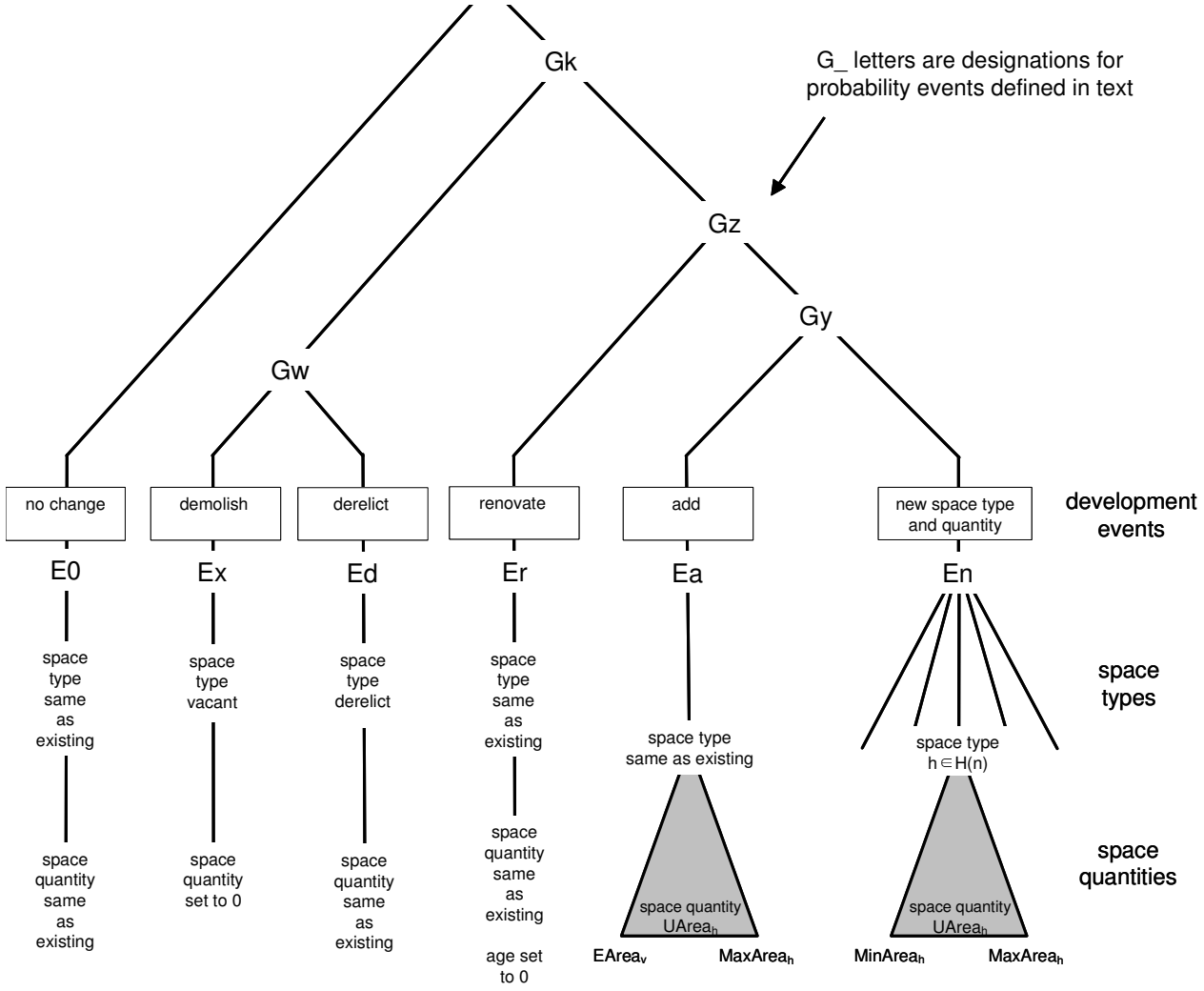
- Iterative approach



Baseline Calibration

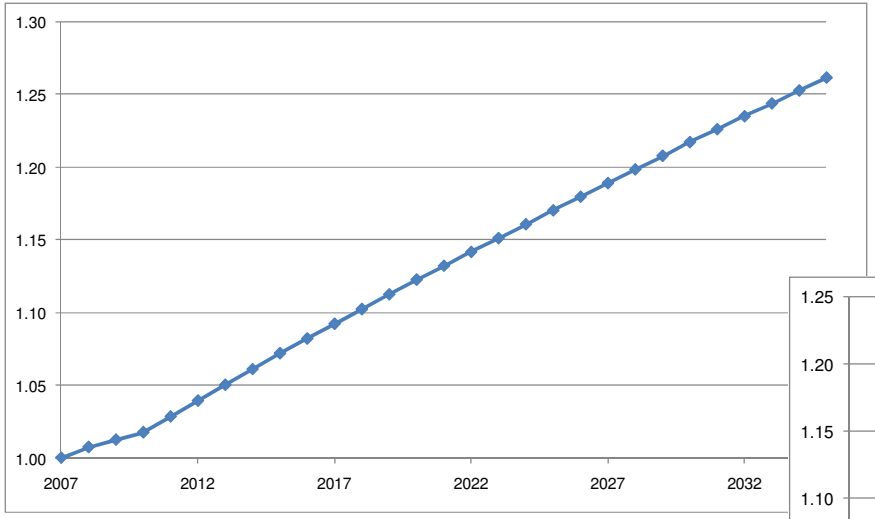


SD-Space Development Model



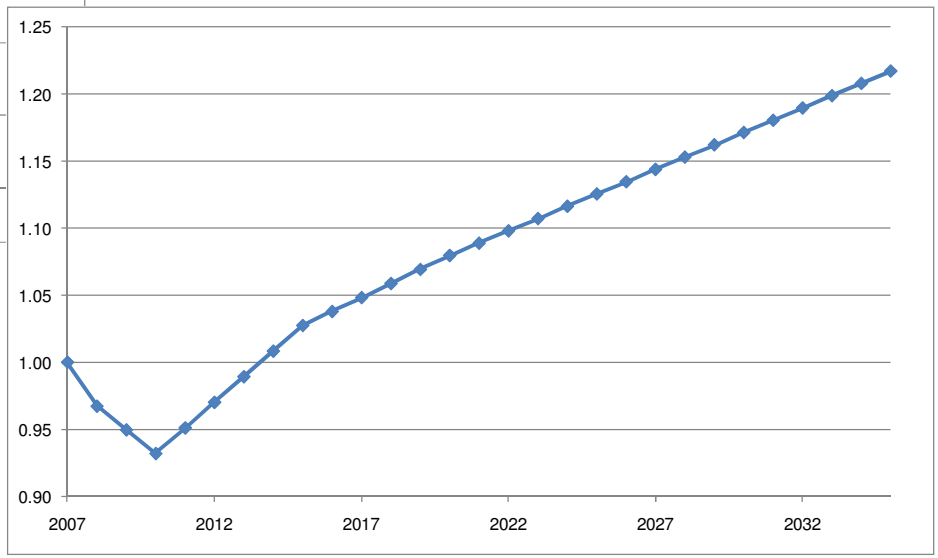
Multi-year Base Run – A partial Success

- Input
  - Regional control of HH & Emp forecast



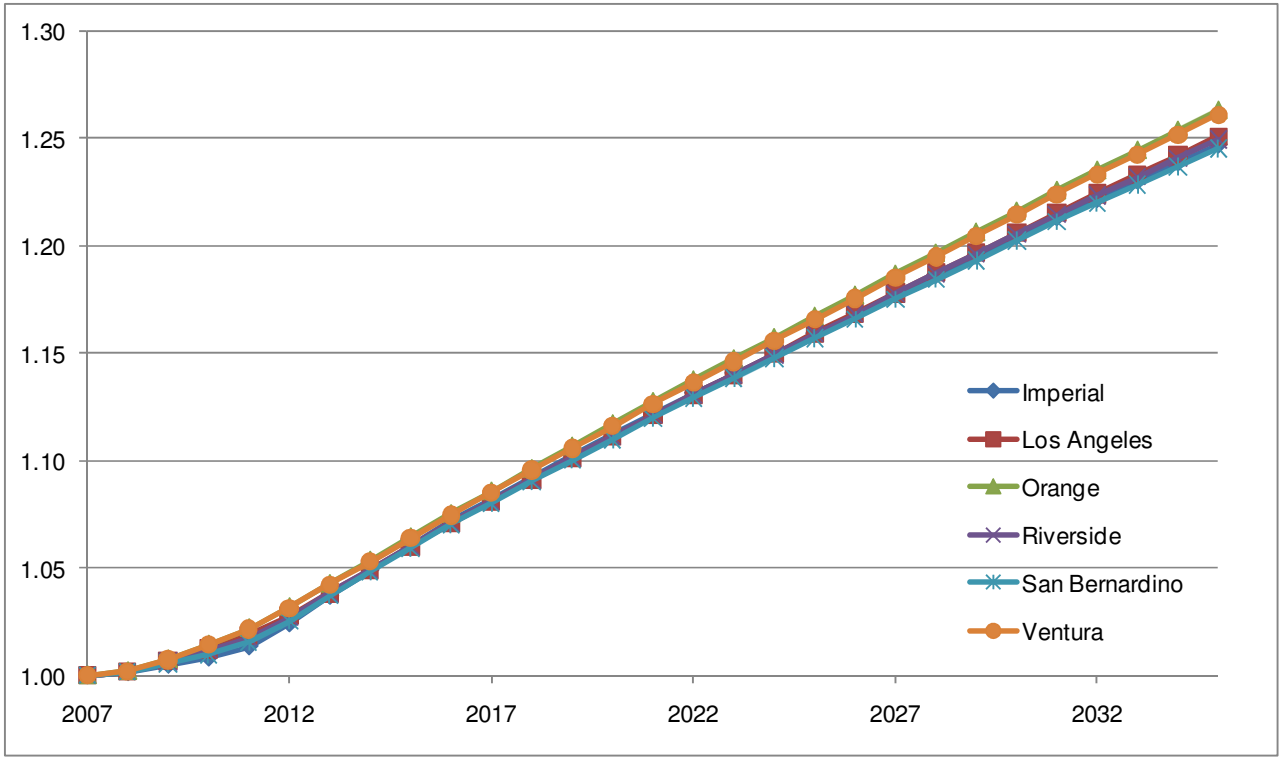
Household

Employment



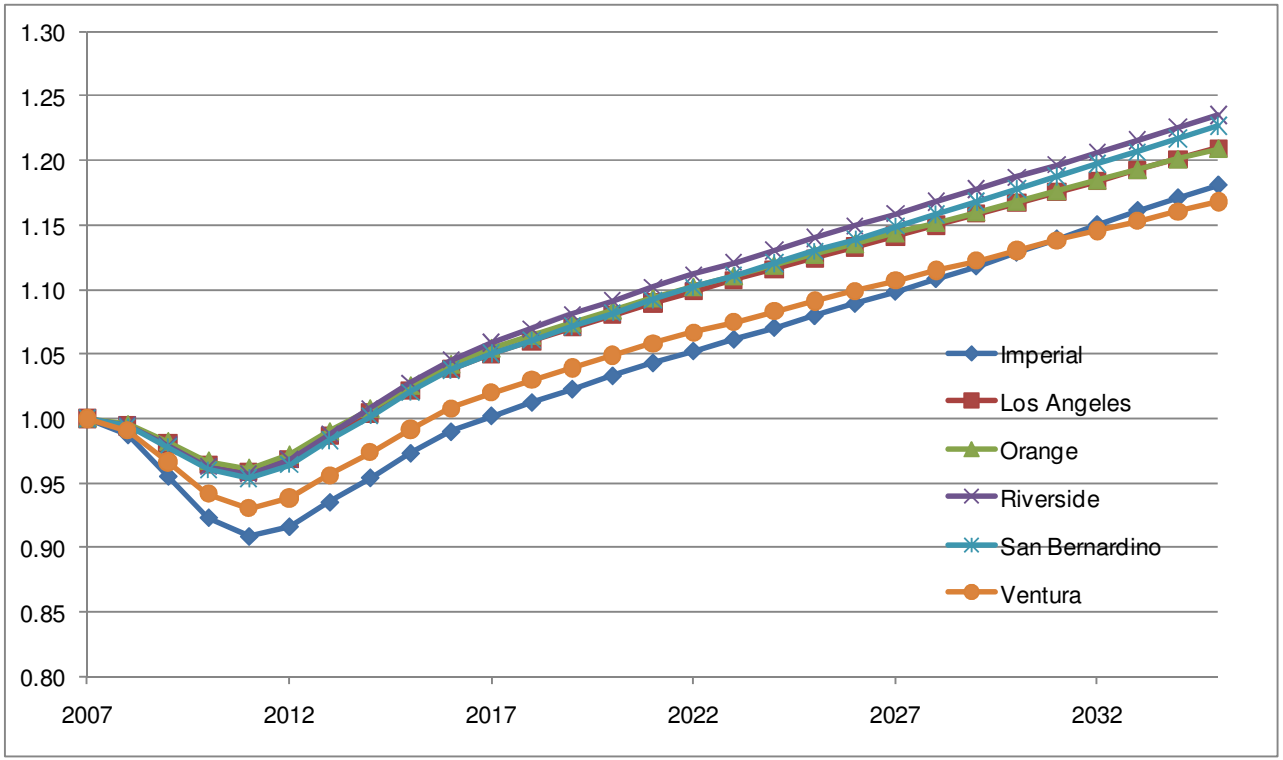
Multi-year Base Run – A partial Success

- PECAS estimated household allocation



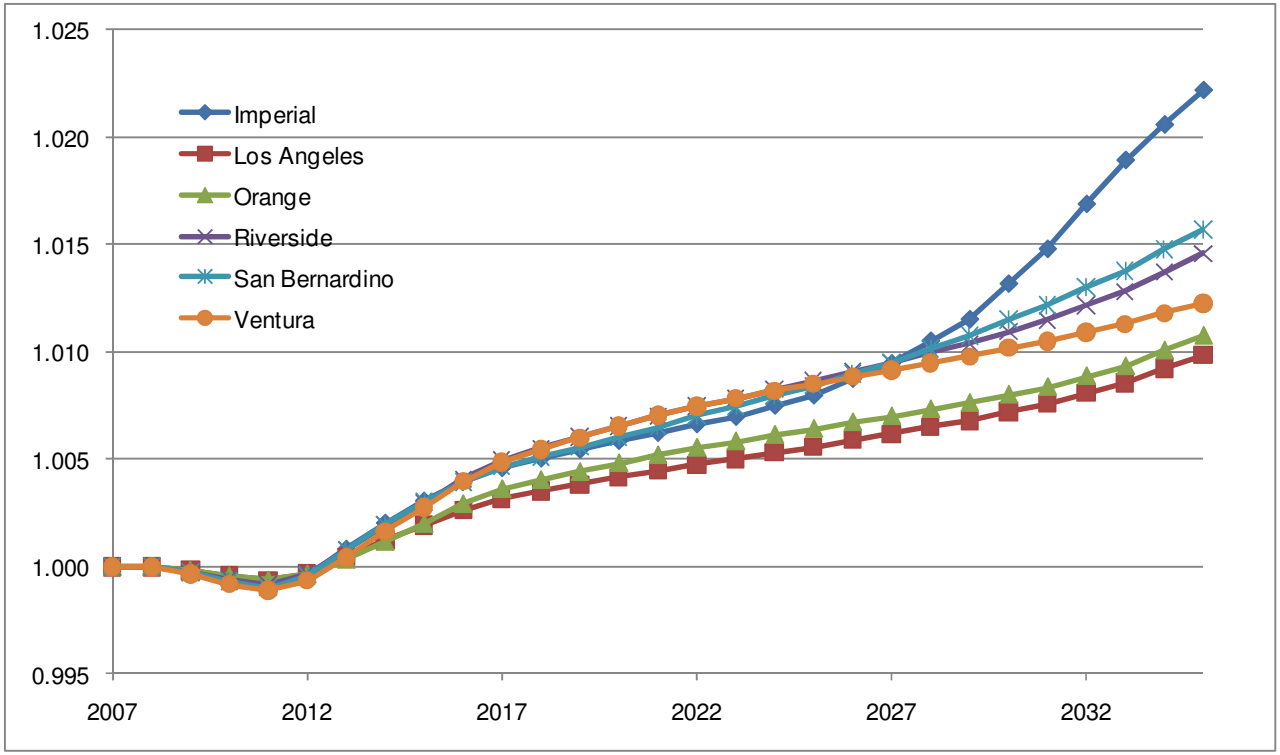
Multi-year Base Run – A partial Success

- PECAS estimated employment allocation



Multi-year Base Run – A partial Success

- Floor space increase

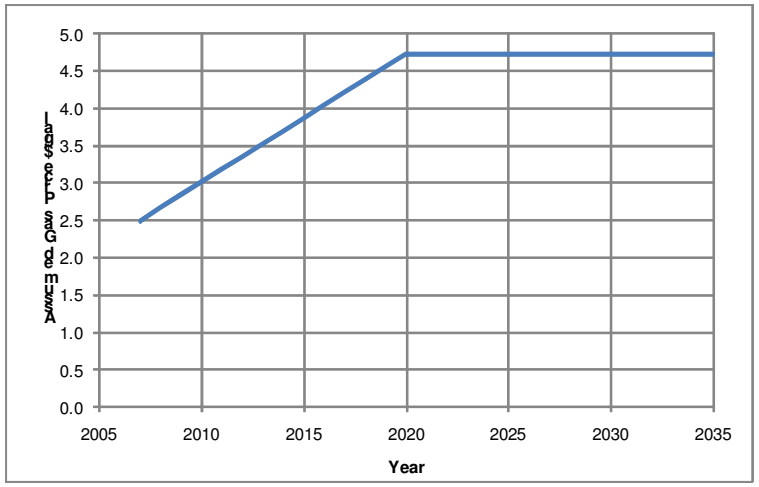


Multi-year Base Run – A partial Success

- Promising…
  - Ran up to 2035
    - Internal consistency between calibrated AA and SD
- Need to be improved…
  - Uniform spatial distribution
  - Questionable space increment
    - Representation through space transition quantity was not correctly implemented

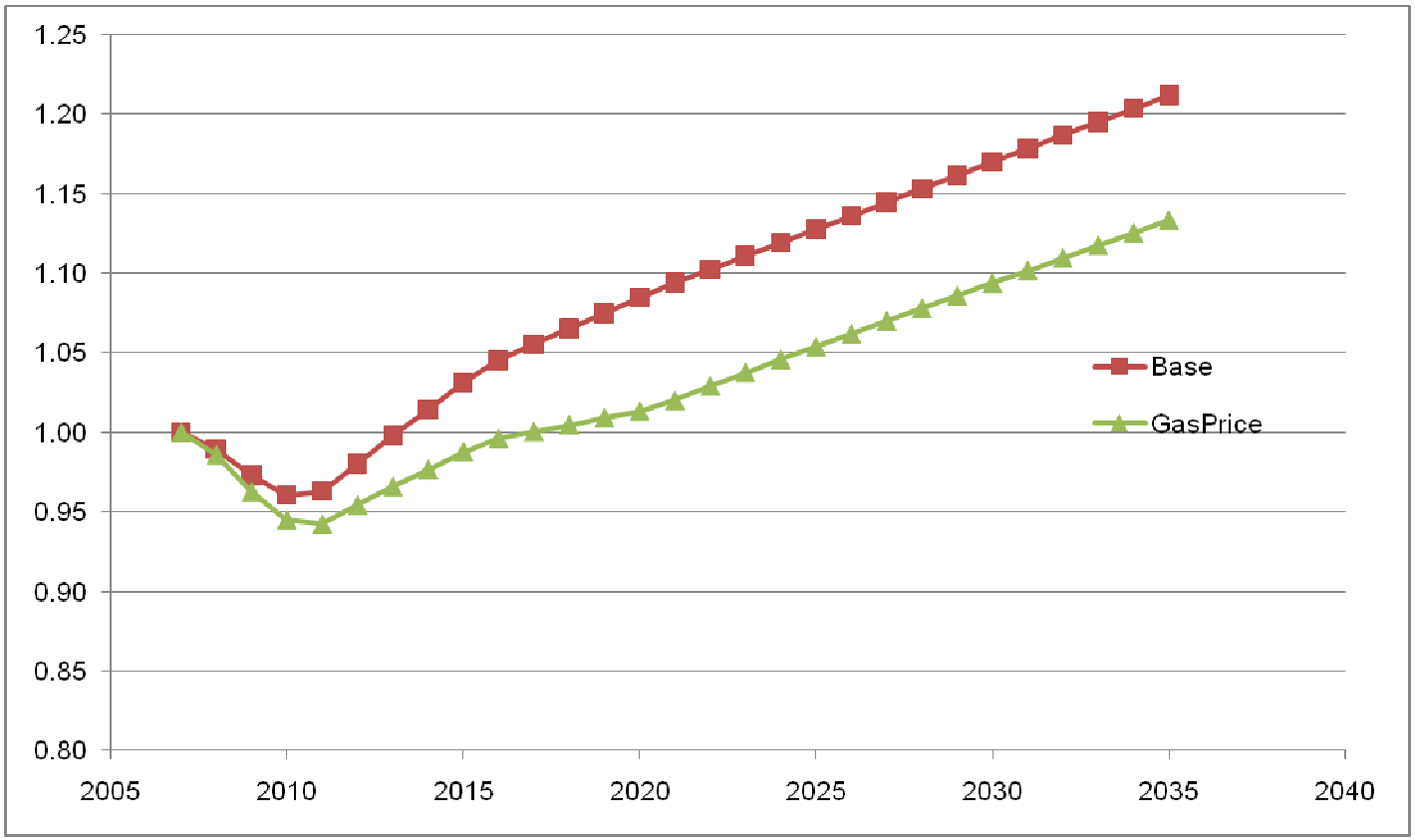
Scenario Test

- Gas price increase
  - $3.00/gal @ 2010 to $4.72/gal @ 2020, and stay same after
  - $0.453 /mile driving cost includes $0.1009 /mile gas cost (2009, AAA)
  - Assume same MPG, increase to $4.72/gal is equivalent to 13% increase of driving cost increase.
  - Uniform increase rate between 2007 and 2020, 1% in each year
  - No network improvement



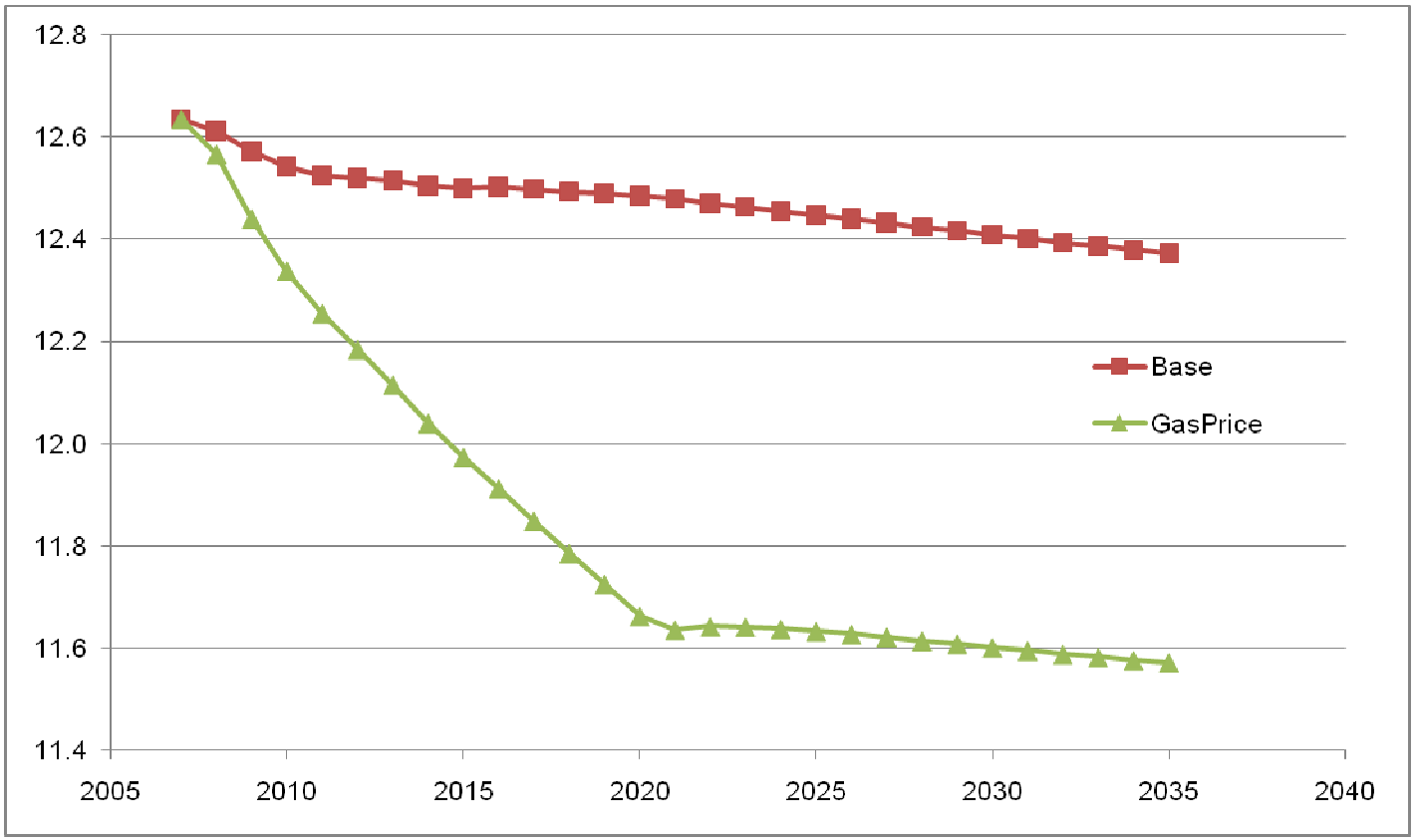
Scenario Test

Total Travel Mile of HBW



Scenario Test

Average Trip Length of HBW



To-Dos

- Model Calibration
  - SD model Calibration
  - AA-SD combined model Calibration
- Validation data set
  - Further refinement to enhance consistency between available data
  - Second set of parcel DB
- Sensitivity Runs

Thank you

- Questions?